AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A communication system, comprising:

an RF amplifier having a power supply input and a signal input; and

a phase bandwidth reduction module coupled to the signal input and configured for modifying an amplitude of a phase component of an input signal provided on the signal input to reduce a bandwidth of the phase component.

2. (Previously Presented) The communication system of claim 1, further comprising:

a power supply amplifier coupled to the power supply input; and

an amplitude bandwidth reduction module coupled to an input of the power supply amplifier, the amplitude bandwidth reduction module configured for modifying amplitude variations of an amplitude component of the input signal to reduce the bandwidth of the amplitude component.

3. (Original) The communication system of claim 2, further comprising:

a delay filter coupled between an output of the amplitude bandwidth reduction module and the input of the power supply amplifier.

4. (Original) The communication system of claim 3, further comprising:

a polar generator having an input for receiving the input signal, a first output for providing a phase signal component of the input signal, and a second output for providing the amplitude component of the input signal to the amplitude bandwidth reduction module.

5. (Original) The communication system of claim 4, wherein the polar generator includes a rectangular to polar converter.

6. (Original) The communication system of claim 5, further comprising:

a polar to rectangular converter having a first input coupled to an output of the phase bandwidth reduction module, a second input coupled to a first output of the rectangular to polar converter, and an output coupled to the RF amplifier.

7. (Original) The communication system of claim 6, further comprising:

an upconverter coupled to the output of the polar to rectangular converter and the signal input of the RF amplifier.

8. (Original) The communication system of claim 7, wherein the upconverter includes at least one local oscillator and one bandpass filter (BPF).

9. (Original) The communication system of claim 8 further comprising:

at least one digital to analog converter (DAC), one low pass filter (LPF), and one in-phase/quadrature (I/Q) modulator coupled together and coupled between the output of the polar to rectangular converter and an input of the upconverter.

10. (Original) The communication system of claim 9, wherein the input signal is a baseband or radio frequency signal that has a high peak-to-average power ratio.

11. (Original) The communication system of claim 10, wherein the input signal is a code division multiple access (CDMA) signal.

12. (Original) The communication system of claim 11, wherein the input signal is a

CDMAOne, CDMA2000, or a WCDMA signal.

13. (Original) The communication system of claim 12, wherein the communication system amplifies the input signal using envelope elimination and restoration (EER).

14. (Previously Presented) The communication system of claim 13, wherein the phase bandwidth reduction module modifies the amplitude component of the phase component of the input signal based on a non-linear relationship between phase signal amplitude and CDMA signal amplitude.

15. (Previously Presented) The communication system of claim 14, wherein the amplitude bandwidth reduction module modifies amplitude variations of the amplitude component of the input signal based on a non-linear relationship between supply voltage to the RF amplifier and the CDMA signal amplitude.

16. (Previously Presented) The communication system of claim 14, wherein the phase bandwidth reduction module modifies the amplitude component A_{phase} of the phase component of the input signal based on the non-linear relationship

$A_{phase} = A_{max}\left(\left(1-e^{px}\right)/\left(1-e^{p}\right)\right)$, where A_{max} represents a maximum amplitude of the input signal, x represents a normalized amplitude of the input signal, and p represents a variable adjustment parameter.

17. (Previously Presented) The communication system of claim 15, wherein the amplitude bandwidth reduction module modifies the amplitude variations VDD of the amplitude

component of the input signal based on the non-linear relationship $VDD = \left(x + be^{(-x/b)}\right)\left(V_{DDmax}\right)$, where V_{DDmax} represents a maximum amplitude of the input signal, x represents a normalized amplitude of the input signal, and b represents a variable adjustment parameter.

18. (Previously Presented) The communication system of claim 2, wherein the phase bandwidth reduction module modifies the amplitude component of the phase component of the input signal based on a non-linear relationship between phase signal amplitude and CDMA signal amplitude.

19. (Previously Presented) The communication system of claim 18, wherein the amplitude bandwidth reduction module modifies amplitude variations of the amplitude component of the input signal based on a non-linear relationship between supply voltage to the RF amplifier and CDMA signal amplitude.

20. (Previously Presented) The communication system of claim 18, wherein the phase bandwidth reduction module modifies the amplitude component A_{phase} of the phase component of the input signal based on the non-linear relationship $A_{phase} = A_{max}\left(\left(1 - e^{px}\right) / \left(1 - e^{p}\right)\right)$, where A_{max} represents a maximum amplitude of the input signal, x represents a normalized amplitude of the input signal, and p represents a variable adjustment parameter.

21. (Currently Amended) The <u>communication</u> system of claim 19, wherein the amplitude bandwidth reduction module modifies the amplitude variations VDD of the amplitude

component of the input signal based on the non-linear relationship $VDD = \left(x + be^{(-x/b)}\right)(V_{DDmax})$, where V_{DDmax} represents a maximum amplitude of the input signal, x represents a normalized amplitude of the input signal, and b represents a variable adjustment parameter.

22. (Previously Presented) A base station in a wireless communications system, comprising:

an RF amplifier having a power supply input and a signal input; and

a phase bandwidth reduction module coupled to the signal input and configured for modifying an amplitude of a phase component of an input signal provided on the signal input to reduce a bandwidth of the phase component.

23. (Previously Presented) The base station of claim 22, further comprising:

a power supply amplifier coupled to the power supply input; and

an amplitude bandwidth reduction module coupled to an input of the power supply amplifier, the amplitude bandwidth reduction module configured for modifying amplitude variations of an amplitude component of the input signal to reduce the bandwidth of the amplitude component.

24. (Original) The base station of claim 23, further comprising:

a delay filter coupled between an output of the amplitude bandwidth reduction module and the input of the power supply amplifier.

25. (Previously Presented) The base station of claim 24, wherein the phase bandwidth reduction module modifies the amplitude component of the phase component of the

input signal based on a non-linear relationship between phase signal amplitude and CDMA signal amplitude so as to reduce power leak through from a signal driver.

26. (Previously Presented) The base station of claim 25, wherein the amplitude bandwidth reduction module modifies amplitude variations of the amplitude component of the input signal based on a non-linear relationship between supply voltage to the RF amplifier and CDMA signal amplitude.

27. (Previously Presented) The base station of claim 25, wherein the phase bandwidth reduction module modifies the amplitude component A_{phase} of the phase component of the input signal based on the non-linear relationship $A_{phase} = A_{max}\left(\left(1 - e^{px}\right) / \left(1 - e^{p}\right)\right)$, where A_{max} represents a maximum amplitude of the input signal, x represents a normalized amplitude of the input signal, and p represents a variable adjustment parameter.

28. (Previously Presented) The base station of claim 26, wherein the amplitude bandwidth reduction module modifies the amplitude variations VDD of the amplitude component of the input signal based on the non-linear relationship $VDD = \left(x + be^{(-x/b)}\right)\left(V_{DDmax}\right)$, where V_{DDmax} represents a maximum amplitude of the input signal, x represents a normalized amplitude of the input signal, and b represents a variable adjustment parameter.

29. (Original) The base station of claim 28, wherein the input signal is a baseband or radio frequency signal that has a high peak-to-average power ratio.

30. (Original) The base station of claim 29, wherein the input signal is a code division multiple access (CDMA) signal.

31. (Original) The base station of claim 30, wherein the input signal is a CDMAOne, CDMA2000, or a WCDMA signal.

32. (Original) The base station of claim 30, wherein a base station transmitter amplifies input signal using envelope elimination and restoration (EER).

33. (Previously Presented) A method for processing a communication signal, comprising:

separating an input signal into an amplitude component signal and a phase component signal;

modifying an amplitude of the phase component signal to reduce a bandwidth of the phase component signal; and

controlling a signal input of an RF amplifier with the modified phase component signal.

34. (Previously Presented) The method of claim 33, further comprising:

modifying amplitude variations of the amplitude component signal to reduce a bandwidth of the amplitude component signal; and

controlling a supply voltage input of the RF amplifier with the modified amplitude component signal.

35. (Previously Presented) The method of claim 34, wherein modifying the amplitude of the phase component signals comprises modifying the amplitude of the phase component

based on a non-linear relationship between the amplitude of the phase component signal and a CDMA signal amplitude.

36. (Previously Presented) The method of claim 35, wherein modifying the amplitude variations of the amplitude component signal comprises modifying the amplitude variations based on a non-linear relationship between a supply voltage to the RF amplifier and the CDMA signal amplitude.

37. (Previously Presented) The method of claim 35, wherein modifying the amplitude of the phase component signals based on the non-linear relationship between the amplitude of the phase component signal and the CDMA signal amplitude comprises modifying the amplitude of the phase component signals based on $A_{phase} = A_{max}\left(\left(1-e^{px}\right)/\left(1-e^{p}\right)\right)$,, where A_{max} represents a maximum amplitude of the input signal, x represents a normalized amplitude of the input signal, and p represents a variable adjustment parameter.

38. (Previously Presented) The method of claim 37, wherein modifying the amplitude variations based on the non-linear relationship between the supply voltage to the RF amplifier and the CDMA signal amplitude comprises modifying the amplitude variations based on $VDD = \left(x + be^{(-x/b)}\right)\left(V_{DDmax}\right)$, where V_{DDmax} represents a maximum amplitude of the input signal, x represents a normalized amplitude of the input signal, and b represents a variable adjustment parameter.

39. (Original) The method of claim 38, wherein the input signal is a baseband or radio frequency signal and has a high peak-to-average power ratio.

40. (Original) The method of claim 39, wherein the input signal is a code division multiple access (CDMA) signal.

41. (Original) The method of claim 40, wherein the input signal is a CDMAOne, CDMA2000, or a WCDMA signal.

42. (Currently Amended) The method ~~system~~ of claim 41, wherein ~~the method uses~~ envelope elimination and Restoration (EER) is used to amplify the input signal.